WHAT IS CLAIMED IS:

1. A substrate processing apparatus, comprising:

a first process chamber in which a first process disposes a substrate;

a second process chamber in which a second process disposes the substrate that has finished the first process;

a transfer mechanism configured to transfer the substrate and carry the substrate into and out of said first process chamber and said second process chamber;

a detecting mechanism configured to detect a relative position between the substrate to be carried into said second process chamber by said transfer mechanism and the second process chamber; and

a correcting mechanism configured to correct displacement of the relative position based on a result of the detection by said detecting mechanism.

2. A substrate processing apparatus as set forth in claim 1,

wherein said transfer mechanism has a holding portion configured to hold the substrate, and

wherein said detecting mechanism detects an absolute position of the holding portion to the second process chamber.

3. A substrate processing apparatus as set forth in claim 2, further comprising:

a storage unit configured to store a coordinate system for representing the absolute position of the holding portion and predetermined coordinates representing a proper position of the

holding portion in the coordinate system,

wherein said correcting mechanism compares coordinates in the coordinate system of the substrate detected by said detecting mechanism and the predetermined coordinates to correct displacement between the both coordinates, thereby correcting the displacement of the relative position.

4. A substrate processing apparatus as set forth in claim 1,

wherein said detecting mechanism has at least two photosensors provided on a carry-in route of the substrate by said transfer mechanism, and

wherein an interval between the two photosensors is smaller than a diameter of the substrate.

5. A substrate processing apparatus as set forth in claim 4,

wherein the carry-in route of the substrate by said transfer mechanism extends linearly, and

wherein the two photosensors are arranged in a direction substantially orthogonal to the carry-in route.

6. A substrate processing apparatus as set forth in claim 1,

wherein said detecting mechanism has a transmission-type photosensor.

7. A substrate processing method of a substrate processing apparatus including: a first process chamber in which a first process disposes a substrate ; a second process chamber in which a second process disposes the substrate; and a transfer mechanism configured to transfer the substrate and carry the substrate into and out of

the first process chamber and the second process chamber, said method including:

(a) applying the first process on the substrate in the first process chamber;

(b) carrying the substrate out of the first process chamber by the transfer mechanism after said step (a);

(c) carrying the substrate, which is carried out of the first process chamber, into the second process chamber by the transfer mechanism;

(d) detecting a relative position between the substrate to be carried into the second process chamber by the transfer mechanism in said step (c) and the second process chamber; and

(e) correcting displacement of the relative position based on a result of the detection of said step (d).

8. A substrate processing method as set forth in claim 7, wherein said step (d) is conducted in the course of carrying the substrate into the second process chamber in said step (c).

9. A substrate transfer device, comprising:

a base portion;

at least two holding portions each capable of holding a substrate;

an arm portion coupling said at least two holding portions to each other and connected to said base portion; and

a driving portion configured to drive said arm portion, thereby driving said at least two holding portions to move back and forth synchronously.

10. A substrate transfer device, comprising:

a base portion;

two holding portions each capable of holding a substrate;

an arm portion coupling said two holding portions to each other and connected to said base portion; and

a driving portion configured to drive said arm portion, thereby driving said two holding portions to move back and forth so as to become apart from and close to each other.

11. A substrate transfer device, comprising:

a base portion; and

a plurality of transfer mechanisms provided on said base portion, each of said transfer mechanisms including: two holding portions each capable of holding a substrate; an arm portion coupling the two holding portions to each other and connected to said base portion; and a driving portion configured to drive the arm portion, thereby driving the two holding portions to move back and forth so as to become apart from and close to each other.